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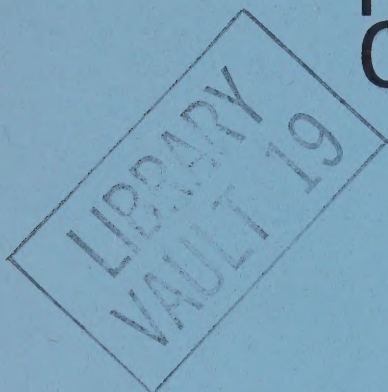
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Alberta Hog Production Cost Study, 1972.



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ALBERTA HOG PRODUCTION COST STUDY



Alberta

Ministry of AGRICULTURE

AGDEX 440/820

Production Economics
Branch

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1972

ALBERTA HOG PRODUCTION
COST STUDY

BY

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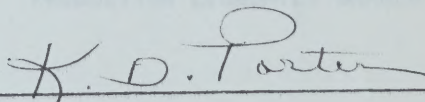
DR. G. R. PURNELL
DEPUTY MINISTER

FOREWORD

Hog production plays an important part in Alberta's agriculture economy. During 1972, cash receipts from the sale of hogs amounted to 118.3 million dollars.

With the growth of the hog industry in Alberta, there has been a trend towards larger specialized hog production units. These include farrow-weaning and feeder enterprises, as well as the more traditional farrow-finish operations.

This study was designed to provide the hog industry with cost, return, and physical production data for these operations, and to furnish guidelines for feed, labour and capital requirements for each type of operation.



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The collection of data for this report was funded by the 1972 Priority Employment Program. Gerry Hoar, project leader, Jerry Bond, Barry Buchanan and Deryk Ziegler collected and summarized the data. The co-operation of the District Agriculturists in the study area was appreciated. Thanks go to Charlotte Fraser for clerical assistance and to Helga Repsch for typing the report.

Special acknowledgement goes to the hog producers who participated in the study.

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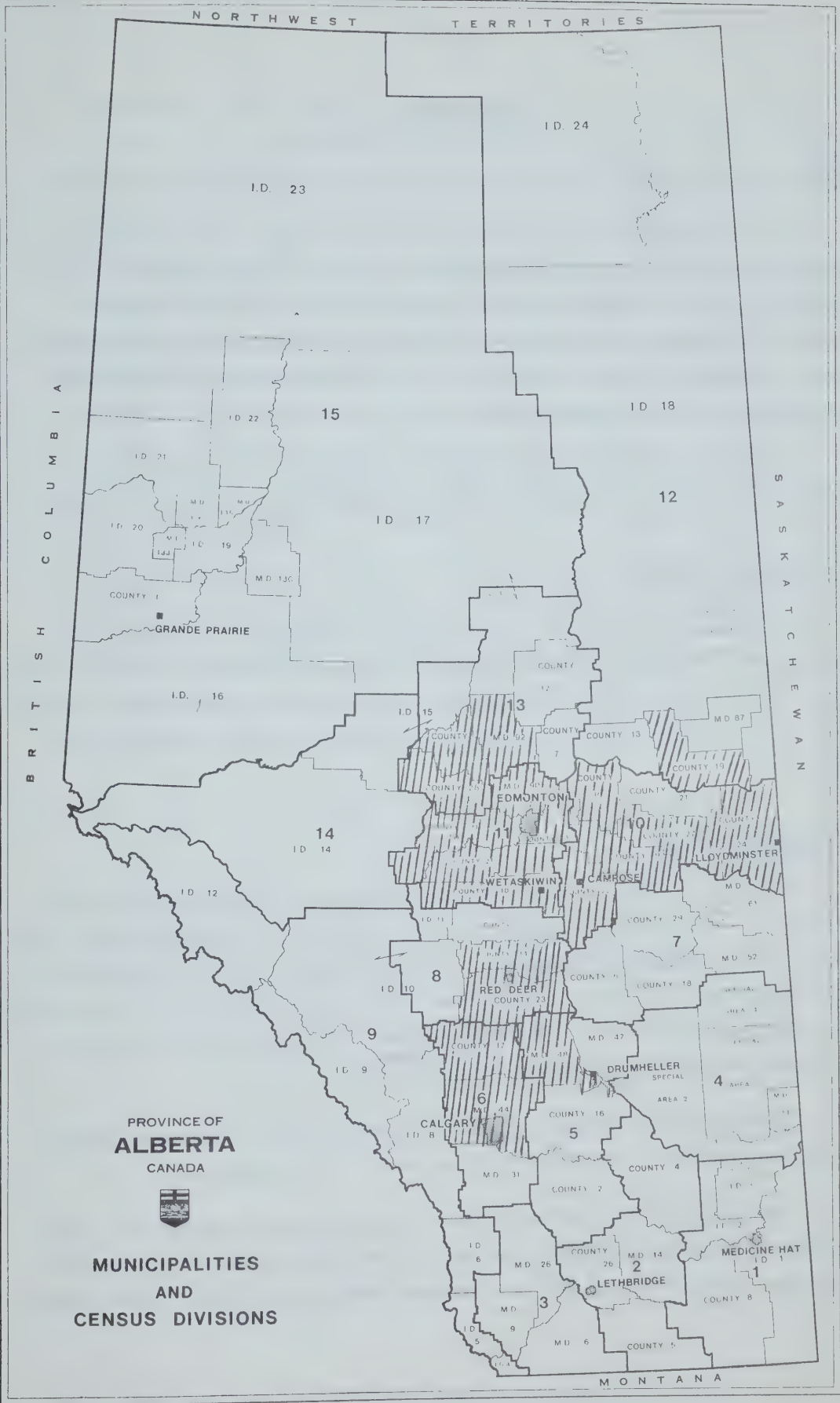
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FIGURE 1



PROCEDURE

Selection of Sample

The selection of the study area to be included in the 1972 Hog Production Cost Study was based on hog population figures for Alberta's counties and municipal districts as given in the 1971 Census Report. Eighteen counties and municipal districts with the highest hog population were selected as given in Figure 1. This area represented 53% of the total provincial hog population.

District Agriculturists in each of the counties provided the names of a variety of types and sizes of hog enterprises in their area.

Collection of Data

The hog producers were contacted and informed of the nature and purpose of the study. Those who were interested in participating in the study and who had sufficient financial and physical records were visited by field men who interviewed the producers and recorded the necessary data.

Analysis of Data

The information collected from each producer was summarized and a financial and physical summary of the enterprise was prepared and mailed back to the respective producers. The data from individual operations was summarized by type of enterprise - (i.e. Farrow-finish, Farrow-weaning, and Feeder operations). Within each type of hog enterprise, farms were grouped according to size and investment level.

The procedure for placing farms in the size and investment groups was their deviation from the mean value for all enterprises.

For example, the farrow-finish enterprises were divided into size groups by placing the farms that were within $\pm \frac{1}{2}$ Standard Deviation of the mean number of sows for all farrow-finish enterprises, in the medium

size group. Farms that had a greater number of sows than the mean number of sows $+\frac{1}{2}$ S.D. were placed in the large size group. Similarly, enterprises that were smaller than the mean size $-\frac{1}{2}$ S.D. were placed in the small size group.

Significance tests (t-test) were performed on the size and investment level group data to determine whether the differences in the group averages were actual differences or whether the differences could have resulted from the variation between enterprises within the same group. The greater the variation between enterprises within the same group, the less confidence we have that the means of the groups are really different. A confidence level of 95%, as was used for the study, indicates there would be little variation between farms within groups as compared to the difference between group means. Means on which t-tests were performed were given subscripts in the study tables. Those given the same subscript were not significantly different, while those with different subscripts were found to be significantly different at the 95% confidence level.

HIGHLIGHTS OF THE STUDY

Table 1 summarizes the costs, returns and physical production data for the three types of hog enterprises included in the 1972 Hog Production Cost Study. The average size of the three types of hog enterprises were similar as measured by the number of sows and the pounds of liveweight production.

The components of total production cost varied with the type of hog enterprise. Figure 2 shows the relationship of various costs to total production costs and the three types of hog enterprises. Feed costs made up the largest percentage of the farrow-finish and farrow-weaning production costs. These were 53.6% and 40.5% respectively.

For the hog feeder enterprises, feeder pig purchases and feed costs made up 76% of the total production costs.

Labour costs as a percentage of total costs were highest for the farrow-weaning enterprises at 28%, as compared to 9% of total costs for the hog feeder enterprises.

During 1972, the farrow-finish enterprises were the most profitable in terms of return on investment and return per hour of labour and management, when compared to the farrow-weaning and feeder enterprises as shown in Table 1.

One reason for this higher profitability was the higher quality hogs produced by the farrow-finish enterprises, as indicated by the Percentage of Hog Gradings Above 100 Index in Table 2.

Another reason for their profitability could be the greater number of pigs weaned per sow per year by the farrow-finish enterprises.

TABLE 1

HIGHLIGHTS OF THE STUDY

Types of Enterprise	<u>Farrow-Finish</u>	<u>Farrow-Weaning</u>	<u>Feeder</u>
Number of Farms	32	10	29
Average Enterprise Size	59.7 Sows	53.6 Sows	1000 Hogs/Yr.
Production Per Enterprise	1592.5 Cwt. L.W. ^{1/}	731 Weaner Pigs	1610 Cwt. L.W. ^{1/}
<u>Costs:</u>	<u>Per Cwt. Produced</u>	<u>Per Weaner Pig Produced</u>	<u>Per Cwt. Produced</u>
Feed Costs	\$11.58	\$7.25	\$10.44
Total Cash Costs	\$11.19	\$8.37	\$23.42
Total Production Costs	\$21.59	\$17.91	\$32.09 *
<u>Returns:</u>			
Value of Production	\$27.17	\$20.34	\$33.00
Net Return to Unpaid Labour, Management, & Investment	\$10.31	\$8.88	\$4.84
% Return on Investment	28.4%	18.0%	11.3%
Return to Labour & Mngt. per Hour	\$6.25	\$3.75	\$3.66
<u>Physical Production:</u>			
No. Pigs Weaned per Sow per Year	14.6	13.6	----
Lbs. Feed/100 lb. Pork Produced	490.5 lbs.	----	428.2 lbs.
% of Hogs Gradings Above 100 Index	63.0%	----	51.6%
Total Investment per Sow	\$618.97	\$288.42	-----
Total Investment per Cwt. Produced	\$24.92	----	\$21.21
Capital Turnover	.79 years	1.04 years	.64 years
Labour Hours	1.5 hours	2.0 hours	1.0 hours

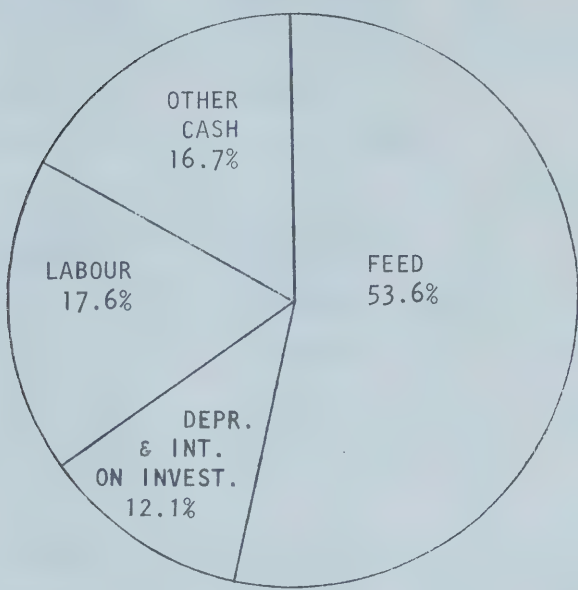
^{1/} Liveweight

* This includes feeder pig purchases

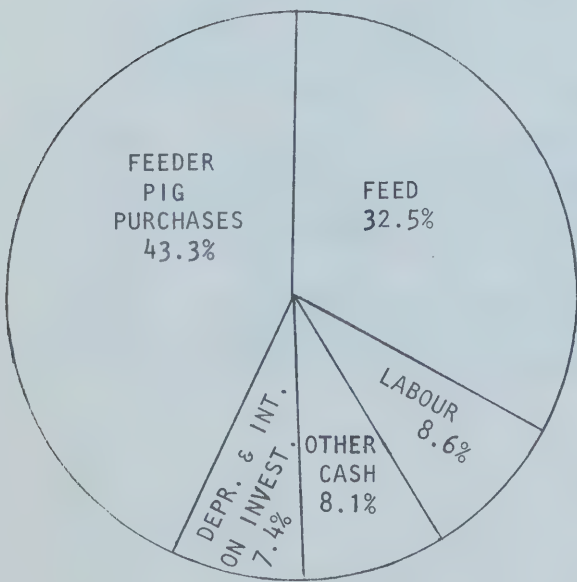
FIGURE 2

COSTS AS A PERCENTAGE OF TOTAL PRODUCTION COSTS

Farrow-Finish Enterprise



Feeder Enterprise



Farrow-Weaning Enterprise

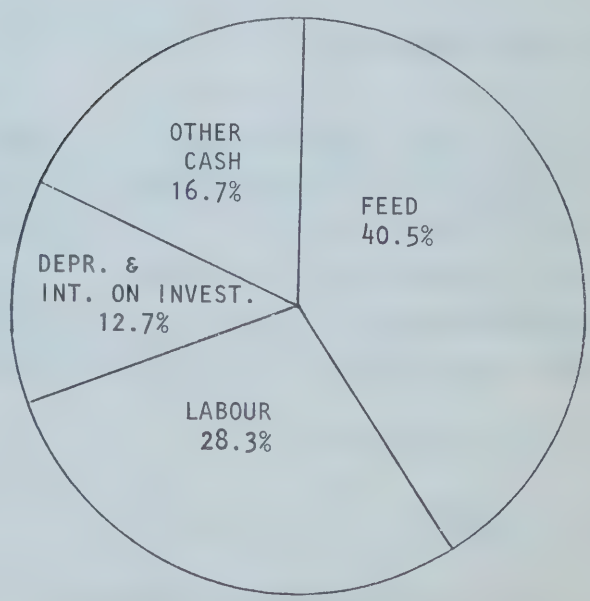


TABLE 2

COMPARISON OF INDEX GRADING FOR HOGS
MARKETED BY STUDY PARTICIPANTS AND
ALL HOGS MARKETED IN ALBERTA

1972

<u>GRADING INDEX</u>	<u>ALL ALBERTA GRADINGS</u>	<u>FARROW-FINISH GRADINGS</u>	<u>FEEDER GRADINGS</u>
109-112	2.6%	7.2%	2.9%
105-107	14.3%	21.8%	14.5%
102-103	31.5%	34.0%	34.2%
100	15.5%	14.2%	16.7%
92-98	21.9%	17.3%	24.0%
Other	14.2%	5.5%	7.7%
% of Index Gradings Above 100 Index	48.4%	63.0%	51.6%

FARROW-FINISH OPERATIONS

All Farms

A total of 32 farrow-finish operations, varying in size from 12 to 190 sows, were included in the study. These farms were located throughout the study area and represented 16 of the 18 counties and M.D.'s included in the study area.

The average size of all farrow-finish operations was 60 sows, producing 1592 cwt. of pork per year.

Costs and Returns

Feed cost, which included \$7.02 of purchased feed and \$4.56 of home-grown feed totalled \$11.58 per hundred pounds of live pork produced. Barley purchases averaged \$0.84 per bushel with supplement purchases at \$8.47 per hundredweight during the study period.

Total cash costs including purchased feed were \$11.19 per hundredweight produced.

Non-cash costs including unpaid labour, depreciation, homegrown grain and interest on investment were \$10.40 per hundredweight giving Total Production Costs of \$21.59 per hundred pounds of liveweight production. Average cash receipts for all farrow-finish operations were \$25.30 per hundredweight produced. With adjustments to take into account pork, which was produced during the year but not sold, the average Value of Production per hundredweight was \$27.17.

Physical Production

A useful measure of the production efficiency of a breeding herd is the number of pigs weaned per sow per year. The average for all enterprises was 14.6 pigs per sow per year during 1972.

Feed required to produce 100 lbs. of pork was 490.5 lbs. for all farms. This included feed for the breeding herd.

The quality of hogs marketed by the 32 farrow-finish operations, as measured by the percentage of grading above 100 Index, was high in comparison to that of all hogs marketed in Alberta. The farrow-finish operations that participated in the study had 63% of their market hogs graded in Alberta in 1972.

Total investment per sow, including investment in breeding stock, buildings, equipment and machinery averaged \$619.00 per sow for all farms. This investment was calculated at present market value and is substantially lower than the new investment requirement necessary for a farrow-finish operation.

An average of 1.5 hours of labour were used in producing a hundred-weight of pork in the farrow-finish operations.

FARROW-FINISH -- SIZE GROUP COMPARISON

The 32 farrow-finish enterprises were grouped into three size groups according to their size in comparison to the mean size of the 32 farms.

The average size of the three groups was 23, 56, and 128 sows respectively.

The effect of the size of enterprise on production costs and production efficiency for farrow-finish operations is shown in Table 3.

Costs and Returns :

The small farrow-finish operations had significantly lower cash costs per hundredweight than the large operations, due to lower hired labour and purchased feed costs. However, non-cash costs per hundredweight were lower for the large operation due mainly to their lower unpaid labour and homegrown feed costs. This resulted in Total Feed Costs and Total Production Costs which were not significantly different for the three size groups.

Returns to operator's labour and management per hundredweight showed no difference with respect to size of operation. When returns were expressed as a percent return to investment, the large operations showed a significantly larger return, due to the high labour cost per hundredweight produced for the small enterprises.

Physical Production

There was no significant difference in the number of pigs weaned per sow per year by the three sizes of farrow-finish operations.

The pounds of feed used per hundredweight of pork produced tended to be lower for the larger operations with 532 lbs. of feed used by the small enterprises as compared to 452 lbs. for the large operations.

The quality of hogs produced, as measured by the number of gradings above 100 Index, increased with the size of enterprise.

Total Investment per sow decreased with enterprise size from \$671.00 per sow for the small enterprises to \$522.00 per sow for the large enterprises.

Labour hours per hundredweight produced showed the same trend with the small operations requiring 2.6 hours of labour per hundredweight produced compared to 1.1 hours per hundredweight for the large farrow-finish enterprises.

TABLE 3

-12-

1972
COSTS AND RETURNS PER CWT. PRODUCED

GROUP SIZE	Farrow-Finish			
	12-36 Sows	40-80 Sows	90-200 Sows	All Farms
# Farms	12	13	7	32
Average Number of Sows	23.3	56.3	128.4	59.7
No. Cwt. Liveweight Production	629	1287	3812	1592.5
Total Cash Receipts	<u>\$24.96</u>	<u>\$26.53</u>	<u>\$24.63</u>	<u>\$25.30</u>
TOTAL VALUE OF PRODUCTION	\$26.58 <i>a</i>	\$29.86 <i>a</i>	\$25.64 <i>a</i>	\$27.17
Cash Costs:				
Replacements Purchased	.49	.54	.72	.62
Vet & Medicine	.35	.27	.26	.28
Transit & Marketing Fees	.67	.44	.36	.43
Building & Equip. Repairs	.29	.69	.40	.48
Cost of Purchased Grain & Complete Feed	1.57	3.24	5.37	4.11
Cost of Purchased Supplement	3.17	3.61	2.33	2.91
Cash Overhead Costs	.90	1.41	1.61	1.44
Machinery Operating Costs	.46	.36	.20	.29
Hired Labour Cost	.20	.01	1.02	.56
Miscellaneous Cash Costs	<u>.15</u>	<u>.06</u>	<u>.05</u>	<u>.07</u>
TOTAL CASH COSTS	\$8.25	\$10.63	\$12.37	\$11.19
Non-Cash Costs:				
Operator Labour	4.25	3.52	1.62	2.64
Family Labour	1.38	1.01	.12	.59
Value of Home Grown Grain	6.73	4.67	3.89	4.56
Depreciation on Buildings & Equip.	1.25	1.28	.90	1.08
Interest on Investment (7%)	1.76	1.87	1.22	1.50
Miscellaneous Non-Cash Cost	<u>.05</u>	<u>.02</u>	<u>.02</u>	<u>.03</u>
TOTAL NON-CASH COSTS	\$15.42	\$12.37	\$7.77	\$10.40
TOTAL PRODUCTION COST	\$23.67 <i>b</i>	\$23.00 <i>b</i>	\$20.14 <i>b</i>	\$21.59
Cash Receipts Over Cash Costs	\$16.68	\$15.88	\$12.26	\$14.11
Net Return to Unpaid Labor, Mngt. & Invest.	\$10.30	\$13.24	\$8.47	\$10.31
Return to Operator's Labour & Mngt.	\$7.16	\$10.37	\$7.13	\$8.22
% Return on Investment	18.7%	33.2%	38%	28.4%
Capital Turnover	.94 yrs.	.88 yrs.	.69 yrs.	.79 yrs.

Means with different subscripts are significantly different ($P < .05$)

1972
PHYSICAL PRODUCTION DATA

GROUP SIZE	Farrow-Finish			
	12-36 Sows	40-80 Sows	90-200 Sows	All Farms
Average No. of Sows	23.3	56.3	128.4	59.7
No. Cwt. Liveweight Production	629	1287	3812	1592.5
No. of Farrowings per Sow per Year	1.8	1.8	1.9	1.8
No. of Pigs Born per Litter	10.6	9.8	10.0	10.1
No. of Pigs Weaned per Litter	7.6	8.2	7.9	7.9
% Death Loss before Weaning	28.1%	18.1%	20.1%	21.8%
No. of Pigs Weaned per Sow per Year	13.6	15.1	15.3	14.6
Age at Weaning	6.0 wks.	5.8 wks.	4.6 wks.	5.6 wks.
Weight at Weaning	28.1 lbs.	25.4 lbs.	16.4 lbs.	24.3 lbs.
No. of Sows per Boar	17.3	21.7	20.7	19.8
Value per Sow	\$90.34	\$103.84	\$80.31	\$93.63
Value per Boar	\$94.70	\$165.54	\$130.00	\$131.20
Liveweight of Finished Hogs	206.1 lbs.	205.7 lbs.	204.5 lbs.	205.6 lbs.
Carcass Weight of Finished Hogs	164.2 lbs.	163.4 lbs.	162.4 lbs.	163.4 lbs.
Lbs. Feed Fed/Sow/Day - Gestation	8.3 lbs.	7.0 lbs.	5.4 lbs.	7.4 lbs.
- Lactation	11.1 lbs.	9.3 lbs.	10.3 lbs.	10.1 lbs.
Lbs. Feed Fed per Cwt. Pork Produced	531.8 lbs. ^a	467.3 lbs. ^a	452.3 lbs. ^a	490.5 lbs.
Feed Conversion (Liveweight)	5.3 to 1	4.7 to 1	4.5 to 1	4.9 to 1
(Dressed Weight)	6.6 to 1	5.8 to 1	5.6 to 1	6.1 to 1
Breakdown of Index Gradings (%)				
109 - 112	5.9%	10.0%	3.8%	7.2%
105 - 107	22.7%	21.6%	22.3%	21.8%
102 - 103	27.2%	34.4%	45.2%	34.0%
100	16.4%	14.1%	13.7%	14.2%
91 - 98	20.5%	17.0%	11.7%	17.3%
82 - 88	5.9%	2.0%	2.6%	4.5%
67	.8%	.5%	.5%	.7%
Other	.5%	.4%	.2%	.3%
Per Cent of Gradings above 100 Index	58.8% ^b	66.0% ^b	71.3% ^b	63.0%
Per Cent Death Loss After Weaning	3.4%	1.6%	1.1%	2.2%

Means with different subscripts are significantly different (P<.05)

1972
PHYSICAL PRODUCTION DATA

GROUP SIZE	Farrow-Finish			
	12-36 Sows	40-80 Sows	90-200 Sows	All Farms
<u>Investment:</u>				
Investment in Livestock	\$2,350.09	\$6,682.76	\$11,806.50	\$6,178.53
Investment in Land and Buildings	\$9,716.68	\$20,515.42	\$41,628.97	\$21,084.48
Investment in Machinery & Equipment	\$3,609.57	\$6,399.43	\$13,641.91	\$6,937.52
Total Investment	\$15,676.34	\$33,597.61	\$67,077.38	\$34,310.08
Investment per Sow	\$671.63	\$596.76	\$522.41	\$618.97
Investment per Cwt. Produced	\$24.93 ^a	\$26.11 ^a	\$17.60 ^a	\$24.92
No. of Labour Hours Per Cwt. Produced	2.6 hrs. ^b	1.8 hrs. ^c	1.1 hrs. ^c	1.5 hrs.
Feed Cost per 100 lbs. Dressed Weight	\$14.34	\$14.40	\$14.56	\$14.49
Total Costs per 100 lbs. Dressed Weight	\$29.59	\$28.75	\$25.18	\$26.75

Means with different subscripts are significantly different (P<.05)

FARROW-FINISH - INVESTMENT LEVEL

A great deal of variation in Total Investment per Sow was evident among the farrow-finish enterprises included in the study. The type and age of facilities, degree of mechanization, value of breeding stock and the number of sows in relation to the capacity of facilities all affected the investment per sow.

In order to determine whether there was a relationship between the total investment per sow and the profitability of an enterprise, the farrow-finish operations were grouped into three investment levels. The average investments per sow were \$413.00, \$588.00 and \$928.00 for the low, medium, and high investment groups, respectively.

Costs and Returns

The high value of production from the high investment group is due to the sale of breeding stock and weaner pigs by farms in that group.

Production costs per hundredweight were also higher for the high investment farms due to higher depreciation, interest on investment and labour costs.

Returns to operator's labour and management were similar for the three investment groups.

Physical Production

There was no significant difference in the quality of hogs produced by the three investment groups. Feed requirements per pound of pork produced were less for the high investment group at 435 pounds feed per hundredweight pork, compared to about 500 pounds of feed for the low and medium investment groups.

There was no significant difference in the labour requirements per hundredweight produced for the three investment groups.

1972
FARROW-FINISH ENTERPRISES - COSTS AND RETURNS

INVESTMENT GROUP	Total Investment per Sow		
	Low Investment	Medium Investment	High Investment
# Farms	10	16	6
Average Investment per Sow	\$413.00	\$588.00	\$928.00
# Sows	60.6	63.5	47.5
Cwt. Liveweight Production	1424.5	1839.0	1214.9
Total Cash Receipts	\$23.00	\$25.09	\$30.64
TOTAL VALUE OF PRODUCTION	\$25.91 ^a	\$26.06 ^a	\$34.11 ^a
<u>Cash Costs:</u>			
Replacements Purchased	.99	.35	1.05
Vet. & Medicine	.21	.32	.27
Transit & Marketing Fees	.46	.41	.49
Building & Equipment Repairs	.37	.44	1.04
Cost of Purchased Grain & Complete Feed	2.80	4.40	5.50
Cost of Purchased Supplement	3.53	2.26	4.31
Cash Overhead Costs	.98	1.63	1.56
Machinery Operating Costs	.29	.24	.48
Hired Labour Cost	.94	.52	.02
Miscellaneous Cash Costs	.09	.04	.14
TOTAL CASH COSTS	\$10.66	\$10.61	\$14.86
<u>Non-Cash Costs:</u>			
Operator Labour	2.77	2.25	3.73
Family Labour	.46	.33	2.10
Value of Home Grown Grain	4.25	5.02	3.35
Depreciation on Buildings & Equipment	.82	.99	1.93
Interest on Investment (7%)	1.10	1.45	2.57
Miscellaneous Non-Cash Cost	.06	.01	.02
TOTAL NON-CASH COST	\$9.46	\$10.05	\$13.70
TOTAL FEED COST	\$10.58	\$11.68	\$13.16
TOTAL PRODUCTION COST	\$20.10 ^b	\$20.62 ^b	\$28.56 ^b
Cash Receipts Over Cash Costs	\$12.35	\$14.51	\$15.77
Net Returns to Unpaid Labour, Mngt. & Invest.	\$10.13	\$9.45	\$13.95
Return to Operator's Labour & Management	\$8.58	\$7.68	\$9.28
% Return on Investment	37.8%	33.8%	22.4%
Capital Turnover	.7 yrs.	.8 yrs.	1.1 yrs.

Means with different subscripts are significantly different ($P < .05$)

1972
FARROW-FINISH - PHYSICAL PRODUCTION

INVESTMENT GROUP	Investment Level		
	Low. Investment	Medium Investment	High Investment
Average No. of Sows	60.6	63.5	47.5
No. of Farrowings per Sow per Year	1.75	1.9	1.7
No. of Pigs Born per Litter	9.5	10.3	10.5
% Death Loss before Weaning	29.2%	22.3%	17.1%
No. of Pigs Weaned per Sow per Year	12.7	15.3	14.8
Age at Weaning	5.8 wks.	5.6 wks.	5.3 wks.
Weight at Weaning	23.5 lbs.	20.7 lbs.	22.8 lbs.
No. of Sows per Boar	22.6	19.1	17.1
Value per Sow	\$84.00	\$88.52	\$123.33
Value per Boar	\$114.00	\$129.46	\$164.17
Liveweight of Finished Hogs	204.7 lbs.	204.8 lbs.	208.9 lbs.
Carcass Weight of Finished Hogs	161.5 lbs.	163.3 lbs.	166.3 lbs.
Lbs. Feed Fed/Sow/Day - Gestation	6.9 lbs.	10.0 lbs.	5.7 lbs.
- Lactation	9.0 lbs.	10.4 lbs.	10.8 lbs.
Lbs. Feed Fed per Cwt. Pork Produced	508.0 lbs.	500.0 lbs.	434.5 lbs.
Feed Conversion (Liveweight)	5.1 to 1	5.0 to 1	4.3 to 1
(Dressed Weight)	6.4 to 1	6.3 to 1	5.4 to 1
Breakdown of Index Gradings (%)			
109 - 112	10.5%	5.3%	6.9%
105 - 107	20.4%	22.7%	23.7%
102 - 103	35.0%	33.6%	32.9%
100	13.8%	16.0%	13.6%
91 - 98	16.6%	17.1%	18.7%
82 - 88	2.8%	4.2%	3.3%
67	.5%	.6%	.8%
Other	.2%	.5%	.2%
Per Cent of Gradings above 100 Index	65.9%	61.6%	63.5%
Per Cent Death Loss after Weaning	2.1%	2.5%	1.3%

1972
FARROW-FINISH - PHYSICAL PRODUCTION

INVESTMENT GROUP	Investment Level		
	Low Investment	Medium Investment	High Investment
<u>Investment:</u>			
Investment in Livestock	\$5,500.29	\$6,237.13	\$6,673.32
Investment in Land and Buildings	\$14,780.99	\$24,015.58	\$27,384.45
Investment in Machinery & Equipment	\$4,725.86	\$7,055.12	\$10,023.80
Total Investment	\$25,000.14	\$37,307.83	\$44,081.58
Investment per Sow	\$412.66	\$587.52	\$928.03
Investment per Cwt. Produced	\$17.55	\$20.29	\$36.28
No. of Labour Hours per Cwt. Produced	1.5 hrs.	1.4 hrs.	1.9 hrs.
Feed Cost per 100 lbs. Dressed Weight	\$13.04	\$14.61	\$16.45
Total Costs per 100 lbs. Dressed Weight	\$25.13	\$25.78	\$35.70

HOG FEEDER ENTERPRISES

A total of 29 hog feeder operations participated in the 1972 Hog Production Study. These enterprises ranged in size from 223 to 3948 cwt. liveweight production, or approximately 140 to 2450 hogs finished per year.

Costs and Returns

Cash costs for the feeder operations were \$23.42 per hundredweight produced. This included \$13.90 per hundredweight produced for feeder pig purchases. Purchased feed accounted for another \$6.55 per hundredweight of the total cash costs.

Non-cash costs including unpaid labour, homegrown grain, depreciation and interest on investment were \$8.73 per hundredweight, giving total production costs of \$32.17 per hundredweight produced.

Cash receipts averaged \$32.10 per hundredweight produced for the twenty-nine operations.

This was higher on a per hundredweight basis than the receipts for the farrow-finish operations, due to the receipts of a market hog being spread only over the liveweight gain of the hog. This would be approximately 160 lbs. for feeder enterprises as compared to 205 lbs. for the farrow-finish enterprises. Similarly, production costs per hundredweight produced are higher for the feeder enterprises than for the farrow-finish enterprises due to the inclusion of the feeder pig cost.

When cash receipts were adjusted to include the value of pork produced but not sold in 1972, the Value of Production was \$33.00 per hundredweight. This gave a return to operator's labour of \$3.00 per hundredweight (\$4.82 per hog finished) or a return to investment of 11.7%.

Physical Production

The feeder operations included in the study purchased feeder pigs averaging 43 lbs. and marketed them at 204 lbs. The average feeder pig purchase price was \$22.38 during 1972.

Feed required per hundredweight pork produced was 428 lbs. for the feeder enterprises.

The quality of hogs marketed by the feeder operations was slightly lower than that of the farrow-finish operations. The feeder operations had 51.6% of their market hogs grade above 100 Index as compared to 63% for the farrow-finish operations.

The average enterprise investment for the feeder enterprise was \$34,152.00 or \$21.21 per hundredweight produced. This included the investment in buildings, land, equipment, machinery and average investment in feeder pigs.

Labour requirements per hundredweight of pork produced varied from 0.3 to 3.2 hours with an average labour requirement of 1.0 hour per hundredweight of liveweight production.

FEEDER SIZE GROUPINGS

Costs and Returns

When the twenty-nine feeder enterprises were grouped according to size, as measured by hundredweight of liveweight production, there was no significant difference in per hundredweight costs, total production costs or return to operators' labour for the three size groups.

The slightly higher per hundredweight value of production and total production cost for the smaller enterprises was due to slightly lower liveweight gain per finished hog, over which the costs and returns were spread.

Physical Production

No difference in the sale weight or quality of hogs was observed among the three size groups. Feed conversion tended to be slightly better for the larger farms, although this difference was not significant.

Total investment per hundredweight produced was significantly lower for the larger feeder operations as compared to those in the smaller size groups, indicating some economies of scale for large feeder enterprises.

However, the hours of labour required to produce a hundredweight of pork were not significantly lower for the large feeder operations.

TABLE 7

-22-

1972
COSTS AND RETURNS PER CWT. PRODUCED

GROUP SIZE	Feeder Enterprise			All Farms
	200-1100 Cwt.	1100-2000 Cwt.	2000-4000 Cwt.	
# Farms	11	9	9	29
Average Cwt. Liveweight Production	702	1475	2856	1610
Total Cash Receipts	\$35.70	\$32.32	\$30.85	\$32.10
TOTAL VALUE OF PRODUCTION	\$36.30 ^a	\$33.50 ^a	\$31.95 ^a	\$33.00
<u>Cash Costs:</u>				
Feeder Pigs Purchased	16.63	13.88	13.09	13.90
Vet. & Medicine	.10	.18	.20	.18
Transit & Marketing Fees	.43	.48	.64	.56
Building and Equip. Repairs	.45	.24	.20	.26
Miscellaneous Cash Costs	.10	---	.09	.07
Cost of Purchased Grain & Complete Feed	2.43	2.21	5.34	3.92
Cost of Purchased Supplement	2.70	3.84	1.98	2.63
Cash Overhead Costs	1.03	1.27	1.27	1.23
Machinery Operating Costs	.30	.29	.33	.31
Hired Labour	---	.28	.43	.31
TOTAL CASH COSTS	\$24.17	\$22.67	\$23.57	\$23.37
<u>Non-Cash Costs:</u>				
Operator Labour	3.42	1.82	1.94	2.15
Family Labour	.55	.25	.24	.29
Value of Home-Grown Grain	5.01	5.52	2.71	3.89
Depreciation on Buildings & Equipment	1.03	1.03	.65	.82
Interest on Investment (7%)	1.91	1.66	1.29	1.49
Miscellaneous Non-Cash Costs	.04	---	.13	.08
TOTAL NON-CASH COSTS	\$11.96	\$10.28	\$6.96	\$8.72
TOTAL FEED COST	\$10.14	\$11.57	\$10.03	\$10.44
TOTAL PRODUCTION COST	\$36.13 ^b	\$32.95 ^b	\$30.53 ^b	\$32.09
Cash Receipts Over Cash Costs	\$11.53	\$9.65	\$7.31	\$8.73
Net Return to Unpaid Labour, Mngt. & Invest.	\$6.05	\$4.28	\$4.68	\$4.84
Return to Operator's Labour	\$3.59	\$2.37	\$3.16	\$3.06
% Return on Investment	8.0%	8.7%	13.9%	11.3%
Capital Turnover	.72	.76	.56	.64
Cost per Cwt. gain (excluding feeder purchase)	\$19.50	\$19.62	\$17.44	\$18.19

Means with different subscripts are significantly different ($P < .05$)

TABLE 8

-23-

1972
PHYSICAL PRODUCTION DATA

GROUP SIZE	Feeder Enterprise			
	200-1100 Cwt.	1100-2000 Cwt.	2000-4000 Cwt.	All Farms
Cwt. Liveweight Production	702 Cwt.	1475 Cwt.	2856 Cwt.	1610 Cwt.
Weight of Weaner Pigs Purchased	46.5 lbs.	37.6 lbs.	43.7 lbs.	42.8 lbs.
Sale Weight of Finished Hogs	203.0 lbs.	204.1 lbs.	204.1 lbs.	203.7 lbs.
Carcass Weight of Finished Hogs	161.2 lbs.	161.4 lbs.	159.9 lbs.	160.9 lbs.
Liveweight Gain per Finished Hog	156.5 lbs.	166.5 lbs.	160.4 lbs.	160.9 lbs.
Lbs. Feed per Cwt. Pork Produced	436.6 lbs.	425.7 lbs.	420.4 lbs.	428.2 lbs.
Feed Conversion (Liveweight)	4.4 to 1	4.3 to 1	4.2 to 1	4.3 to 1
(Dressed Weight)	5.5 to 1	5.4 to 1	5.3 to 1	5.4 to 1
Breakdown of Index Gradings (%)				
109 - 112	2.8%	3.9%	1.7%	2.9%
105 - 107	14.6%	15.1%	13.4%	14.5%
102 - 103	33.9%	35.4%	33.0%	34.2%
100	16.9%	14.7%	19.4%	16.7%
91 - 98	25.9%	20.4%	25.8%	24.0%
82 - 88	5.5%	8.8%	5.0%	6.5%
67	.3%	1.6%	1.1%	1.0%
Other	.1%	.1%	.6%	.2%
Per Cent of Gradings Above 100 Index	51.3%	54.4%	48.1%	51.6%
Per Cent Death Loss	5.6%	2.7%	3.8%	3.8%

Investment:

Investment in Livestock	\$6,255.32	\$13,380.96	\$18,288.30	\$12,201.10
Investment in Land & Buildings	\$8,570.69	\$15,621.34	\$24,690.84	\$15,761.63
Investment in Machinery & Equip.	\$3,439.21	\$7,409.21	\$8,330.26	\$6,189.19
Total Investment	\$18,265.22	\$36,411.51	\$51,309.40	\$34,151.92
Investment per Cwt. Produced	\$26.03	\$24.68 ^a	\$17.96 ^b	\$21.21
No. Labour Hours per Cwt. Produced	1.34 hrs. ^a	.91 hrs. ^a	.99 hrs. ^a	1.0 hrs.
Feed Cost per 100 lbs. Dressed Weight	\$12.67	\$14.46	\$12.53	\$13.05
Total Cost per 100 lbs. Dressed Weight	\$45.15	\$41.19	\$38.16	\$40.21

Means with different subscripts are significantly different (P<.05)

FEEDER ENTERPRISE - INVESTMENT LEVEL

As was the case with the farrow-finish enterprises, the type of facilities and equipment used for feeder pig production varied a great deal between operations. In order to determine the effect of the level of investment per hundredweight on returns, the feeder enterprises were grouped into low, medium and high investment groups. The enterprises were placed in these groups according to their investment in buildings, equipment and machinery per hundredweight of pork produced.

Operations with a high per hundredweight investment were smaller in terms of hundredweight production when compared to the medium and low investment enterprises.

The high investment farms also had a higher value of production per hundredweight and higher total production costs per hundredweight than the other investment groups.

This was due, in part, to the high investment farms purchasing heavier feeder pigs.

The heavier feeder pigs resulted in lower liveweight gains per hog, over which the cost of the feeder pig was spread. For the same reason, the value of production per hundredweight was also higher for the high income group.

No significant difference in the quality of hogs or feed conversion was observed between the three investment groups.

TABLE 9

-25-

1972
FEEDER ENTERPRISES - COSTS AND RETURNS

INVESTMENT GROUP	Total Investment per Cwt.		
	Low Investment	Medium Investment	High Investment
# Farms	11	11	7
Investment In Buildings, Equip. & Mach. per Cwt.	\$8.80	\$14.46	\$23.45
Cwt. Liveweight Production	1785.0	1848.5	961
Total Cash Receipts	\$30.72	\$30.29	\$41.55
TOTAL VALUE OF PRODUCTION	\$32.24	\$30.76	\$41.94
<u>Cash Costs:</u>			
Feeder Pigs Purchased	13.12	12.83	19.39
Vet. & Medicine	.12	.26	.09
Transit & Marketing Fees	.48	.73	.29
Building & Equipment Repairs	.15	.29	.45
Cost of Purchased Grain & Complete Feed	1.74	6.39	2.94
Cost of Purchased Supplement	2.98	1.97	3.60
Cash Overhead Costs	1.05	1.36	1.36
Machinery Operating Costs	.28	.34	.32
Hired Labour Cost	.27	.46	---
Miscellaneous Cash Costs	.04	.09	.08
TOTAL CASH COSTS	\$20.23	\$24.72	\$28.52
<u>Non-Cash Costs</u>			
Operator Labour	1.65	2.38	2.94
Family Labour	.27	.36	.15
Value of Home Grown Grain	4.89	2.38	5.50
Depreciation on Buildings & Equipment	.55	.83	1.58
Interest on Investment	1.25	1.16	1.53
Miscellaneous Non-Cash Costs	.03	.15	---
TOTAL NON-CASH COSTS	\$8.64	\$7.26	\$11.70
TOTAL FEED COST	\$9.61	\$10.74	\$12.04
TOTAL PRODUCTION COST	\$28.87	\$31.96	\$40.22
Cash Receipts Over Cash Costs	\$10.49	\$5.57	\$13.03
Net Returns to Unpaid Labour, Mngt. & Invest.	\$6.54	\$2.68	\$6.34
Return to Operator's Labour	\$5.05	\$1.16	\$4.66
% Return on Investment	26.9%	-.3%	9.8%
Capital Turnover	.53 yrs.	.68 yrs.	.79 yrs.
Cost per Cwt. Gain (Excluding Feeder Purchase)	\$15.75	\$19.13	\$20.83

1972
FEEDER ENTERPRISES - PHYSICAL PRODUCTION DATA

INVESTMENT GROUP	Total Investment per Cwt.		
	Low Investment	Medium Investment	High Investment
Cwt. Liveweight Production	1785	1848.5	961
Investment In Buildings, Equip. & Mach. per Cwt.	\$8.88	\$14.45	\$24.53
Weight of Feeder Pigs Purchased	39.5 lbs.	40.7 lbs.	51.3 lbs.
Sale Weight of Finished Hogs	200.8 lbs.	201.9 lbs.	205.3 lbs.
Carcass Weight of Finished Hogs	161.4 lbs.	159.1 lbs.	165.3 lbs.
Liveweight Gain per Finished Hog	161.3 lbs.	161.2 lbs.	154.0 lbs.
Lbs. Feed per Cwt. Pork Produced	425.7 lbs.	402.0 lbs.	474.0 lbs.
Feed Conversion (Liveweight)	4.3 to 1	4.0 to 1	4.7 to 1
(Dressed Weight)	5.3 to 1	5.0 to 1	5.9 to 1
Breakdown of Index Gradings (%)			
109 - 112	3.8	2.2	2.3
105 - 107	16.6	13.8	11.6
102 - 103	35.0	33.8	33.3
100	17.5	17.6	13.4
91 - 98	22.1	26.7	22.3
82 - 88	4.2	4.7	14.8
67	.8	.6	2.2
Other	--	.6	--
Per Cent of Gradings Above 100 Index	55.4%	49.8%	47.2%
Per Cent Death Loss	1.7%	4.9%	4.6%
<u>Investment:</u>			
Investment in Livestock	\$14,849.87	\$12,007.64	\$8,342.75
Investment in Land and Buildings	\$10,618.83	\$20,162.22	\$16,927.93
Investment in Machinery & Equipment	\$5,230.21	\$6,550.21	\$6,646.73
Total Investment	\$30,698.91	\$38,720.07	\$31,917.41
Investment per Cwt. Produced	\$17.20	\$20.95	\$33.21
Labour Hours per Cwt. Produced	.99 hr.	1.10 hrs.	1.3 hrs.
Feed Cost per 100 lbs. Dressed Weight	\$12.01	\$13.43	\$15.05
Total Cost per 100 lbs. Dressed Weight	\$36.08	\$39.95	\$50.27

FARROW-WEANING OPERATIONS

A total of ten farrow-weaning operations participated in the study. These enterprises ranged in size from 12 to 110 sows. The average size of the farrow-weaning operation was 53.6 sows producing 731 weaner pigs per year.

Costs and Returns

Cash costs for the weaner pig producers averaged \$8.37 per weaner pig produced. This, combined with non-cash costs of \$9.54 gave total production costs of \$17.91 per weaner pig.

Cash receipts were \$19.52 per weaner pig. Adjustment for inventory change gave a value of production of \$20.34 per weaner pig.

This gave a return to operator's labour of \$7.16 per weaner pig or \$3.58 per hour of labour spent with the farrow-weaning enterprise.

Physical Production

Farrow-weaning operations weaned an average of 13.6 pigs per sow per year. Weaning most commonly took place at six weeks of age at which time the pigs weighed about 26 pounds. After weaning the pigs were usually fed for two to three weeks before being marketed at approximately 40 pounds.

The total enterprise investment which included investment in breeding stock, land, buildings, machinery and equipment was \$15,459.00 or \$288.00 per sow.

Labour requirements were 27 hours per sow for the farrow-weaning enterprises. This resulted in an average of two hours of labour per weaner pig produced.

FARROW-WEANING ENTERPRISES - SIZE GROUPS

Costs and Returns

The small number of farrow-weaning enterprises limited the size comparison to two size groups averaging 30 and 79 sows respectively. The value of production per weaner pig was higher for the large farrow-weaning enterprises. This was due, in part, to the difference in marketing systems used by the two size groups. Most of the large farrow-weaning operations sold their weaner pigs to a feeder operation on a contract basis, while the small farrowing enterprises frequently used auction markets to sell their weaner pigs.

The cost of producing a weaner pig was slightly lower for the large operations, due mainly to lower labour costs. This resulted in returns to operator labour and management of \$5.85 and \$7.70 per weaner pig for the small and large farrowing operations respectively.

Physical Production

The number of pigs weaned per sow per year was similar for the two size groups as was the weaning age and weight of the weaner pigs.

The investment in breeding stock, buildings and machinery per weaner pig produced was slightly higher for the large farrowing operations. This was largely due to the higher value placed on sows in the large operations.

Feed and labour requirements per weaner pig produced were lower for the large farrow-weaning enterprises.

1972

FARROW-WEANING - COSTS AND RETURNS

GROUP SIZE	Per Weaner Pig Produced		
	10 - 49 Sows	50 - 100 Sows	All Farms
# Farms	5	5	10
Average Number of Sows	30.4	78.8	53.6
Number of Weaner Pigs Produced	421	1042	731
Total Cash Receipts	\$16.72	\$20.65	\$19.52
TOTAL VALUE OF PRODUCTION	\$18.75	\$20.93	\$20.34
<u>Cash Costs:</u>			
Breeding Stock Purchased	.92	.88	.89
Vet. & Medicine	.37	.29	.31
Transit & Marketing Fees	.01	.04	.03
Building & Equipment Repairs	.17	.39	.33
Miscellaneous Cash Costs	.04	.01	.02
Cost of Purchased Grain & Complete Feed	3.03	4.75	4.26
Cost of Purchased Supplement	1.37	.55	.79
Cash Overhead Costs	.64	1.47	1.23
Machinery Operating Costs	.94	.14	.51
Hired Labour	---	---	---
TOTAL CASH COSTS	\$7.49	\$8.52	\$8.37
<u>Non-Cash Costs:</u>			
Operator Labour	6.44	4.04	4.73
Family Labour	.03	.46	.34
Value of Home Grown Grain	3.10	1.84	2.20
Depreciation on Buildings & Equipment	.58	.73	.69
Interest on Investment (7%)	1.26	1.63	1.38
Miscellaneous Non-Cash Cost	.55	.05	.20
TOTAL NON-CASH COSTS	\$11.96	\$8.74	\$9.54
TOTAL PRODUCTION COST	\$19.45	\$17.46	\$17.91
Cash Receipts Over Cash Costs	\$9.24	\$12.13	\$11.15
Net Return to Unpaid Labor, Mngt. & Invest.	\$7.14	\$9.79	\$8.88
Return to Operator's Labour & Mngt.	\$5.85	\$7.70	\$7.16
% Return on Investment	3.8%	23.5%	18.0%
Capital Turnover	.94 yrs.	1.1 yrs.	1.04 yrs.

1972

FARROW-WEANING - PHYSICAL PRODUCTION DATA

GROUP SIZE	Per Weaner Pig Produced		
	10 - 49 Sows	50 - 100 Sows	All Farms
Average No. of Sows	30.4	78.8	53.6
No. of Farrowings per Sow per Year	1.86	1.6	1.7
No. of Pigs Born per Litter	9.1	10.9	10.0
No. of Pigs Weaned per Litter	7.3	8.6	8.0
% Death Loss Before Weaning	20.5%	20.7%	20.6%
No. of Pigs Weaned per Sow per Year	13.6	13.7	13.6
Age at Weaning	6.2 wks.	5.8 wks.	5.9 wks.
Weight at Weaning	25.6 lbs.	26.3 lbs.	26.0 lbs.
No. of Sows per Boar	22.4	18.6	20.5
Value per Sow	\$81.00	\$103.79	\$92.40
Value per Boar	\$126.00	\$115.00	\$120.50
<u>Investment:</u>			
Investment in Livestock	\$2,316.00	\$9,009.58	\$5,662.79
Investment in Land and Buildings	\$3,792.40	\$10,838.39	\$7,315.40
Investment in Machinery and Equipment	\$1,308.80	\$3,653.19	\$2,480.99
Total Investment	\$7,417.20	\$23,501.16	\$15,459.18
Investment per Sow	\$243.72	\$306.00	\$288.42
Investment per Weaner Pig Produced	\$17.62	\$22.55	\$21.15
Labour Hours per Sow	35.0 hrs.	25.8 hrs.	27.3 hrs.
Labour Hours per Weaner Pig Produced	2.6 hrs.	1.9 hrs.	2.0 hrs.
Pounds Feed Fed per Weaner Pig Produced	298 lbs.	274 lbs.	281 lbs.
Feed Cost per Weaner Pig Produced	\$7.50	\$7.14	\$7.25
Total Cost per Weaner Pig Produced	\$19.45	\$17.46	\$17.91

- APPENDICES -

APPENDIX I

AVERAGE FEED PRICES - 1972Farrow-Finish Enterprises

Barley	\$0.84 per bus.
Supplement	\$8.47 per cwt.
Complete Feed	\$2.63 per cwt.

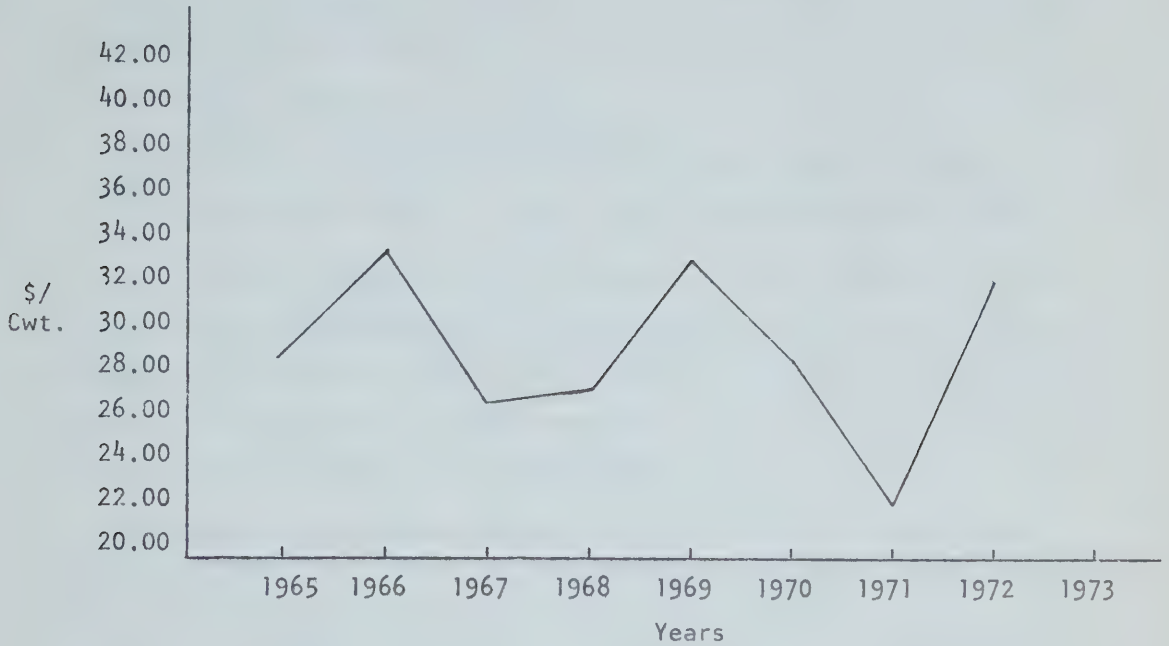
Feeder Enterprises

Barley	\$0.81 per bus.
Supplement	\$7.75 per cwt.
Complete Feed	\$3.00 per cwt.

Farrow-Weaning Enterprises

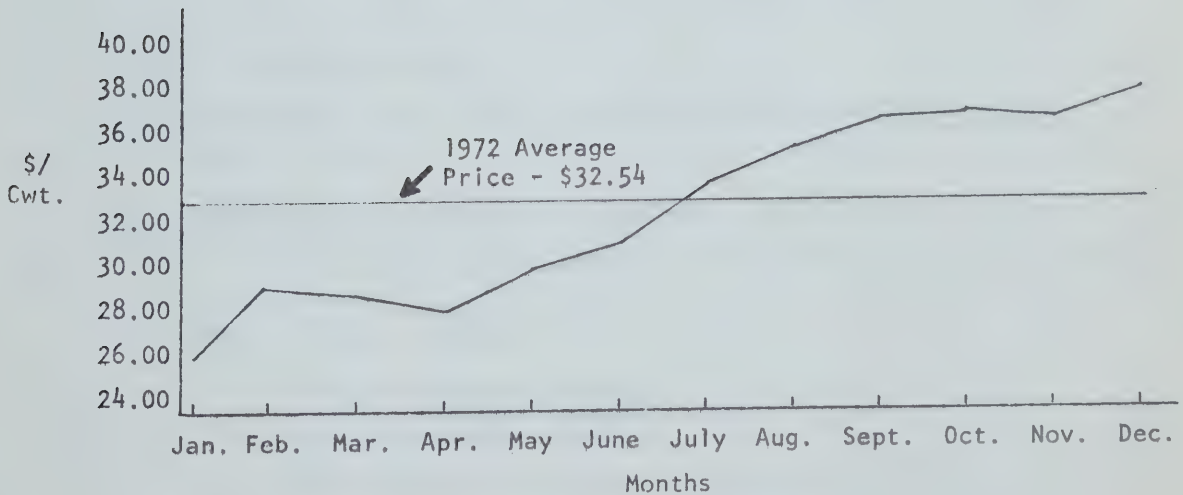
Barley	\$0.87 per bus.
Supplement	\$8.92 per cwt.
Complete Feed	\$4.84 per cwt.

APPENDIX II

AVERAGE DRESSED HOG PRICES, EDMONTON *

* 1965 - 1968 prices for Grade "A" Hogs, 1969 - 1972 Index 100.

1972 MONTHLY DRESSED HOG PRICE
(100 INDEX) EDMONTON



COSTS AND RETURNS

Number Cwt. Liveweight Production - This is a measure of the number of pounds of pork produced per year and is calculated by:

$$\begin{aligned} & \text{Number of Hogs Marketed} \times \text{Liveweight Gain Per Hog} \\ & + \text{Number of Hogs Used in Home} \times \text{Liveweight Gain Per Hog} \\ & \pm \text{Inventory Change of Feeder Hogs} \times \frac{\text{Liveweight Gain Per Hog}}{2} \\ & + \text{Number Replacement Gilts Raised} \times \text{Average Market Hog Weight} \end{aligned}$$

By using the hundredweight produced rather than the number of hogs marketed, we can more accurately calculate the cost of producing a pound of pork. This also gives a common base that can be used in comparing different types and sizes of hog operations.

Adjustment for Inventory Change - The adjustment for inventory change is included to reflect the true value of pork produced during the year. If pigs were produced during the year but not sold was added to the cash receipts to give the actual value of pork produced during the year. Similarly, if a greater number of pigs were sold than were produced during the year, the value of the additional pigs sold would be subtracted from the cash receipts to get the true value of production for the year.

Total Value of Production - This figure takes into account the cash receipts as well as the inventory change and represents the value of the pork produced during the year.

Total Cash Costs - This figure represents the out-of-pocket expenses incurred during the year.

Total Non-Cash Costs - These are costs which do not require an immediate outlay of cash. However, they are part of the total cost of production.

Total Non-Cash Costs include:

- 1) Operator and Family Labour
- 2) Value of Homegrown Grain
- 3) Depreciation on Buildings, Equipment and Machinery
- 4) Interest on the Investment in Livestock, Buildings Equipment and Machinery
- 5) Miscellaneous Non-Cash Costs

- 1) Operator and Family Labour - The cost of operator and family labour is based on the hours of labour spent on the hog enterprise times the per hour value assigned to the labour. The per hour value of the operator labour reflects the rate the operator felt he would have to pay for hired labour to do the same work.
- 2) Value of Homegrown Grain - Grain which was grown on the farm and fed to the hogs was valued at the market value of grain. (i.e. the value for which the grain could have been sold).
- 3) Depreciation on Buildings, Equipment and Machinery - Depreciation costs were calculated at 5% of the present value of buildings, and 10% of the present value of equipment. Depreciation costs for tractors and trucks were calculated from the purchase price and year of purchase using depreciation tables from the Alberta Farm Machinery Cost Study.
- 4) Interest on Investment - This represents the cost of having money invested in the hog enterprise rather than having it invested where interest could be earned. Interest on Livestock Investment is calculated at 7.5% of the average investment in hogs while interest on the Investment in Buildings, Equipment and Machinery is charged at 7%.
- 5) Miscellaneous Non-Cash Costs - This includes any non-cash costs which were not included in the other non-cash costs. (i.e. Homegrown straw used for bedding).

RETURNS

- 1) Cash Receipts Over Cash Costs - This figure represents the amount of money left after paying all cash costs. It is the amount of cash available for paying living expenses, principal payments on loans and as a return to the operator's labour and investment.
- 2) Net Returns to Unpaid Labour, Management and Investment - This is the return left after subtracting all costs except unpaid labour costs and interest on investment charges from the value of production.
- 3) Return to Operator's Labour & Management - This is the return left after subtracting all costs except a charge for operator's labour from the value of production, and represents the return to the operator for the time he spent with the hog enterprise.

- 4) Return to Investment - The return to investment is the return left after subtracting all costs except an interest on investment charge from the value of production.
- 5) Per Cent Return to Investment - This is calculated by expressing the return to investment as a percent of the Total Investment in the hog enterprise. The percent return on investment indicates the rate of return the money invested in the hog enterprise is earning.
- 6) Capital Turnover - The capital turnover shows the number of years it takes the value of production from the hog enterprise to equal the total investment in the enterprise. This is expressed in years and is calculated by:

$$\frac{\text{Total Investment}}{\text{Value of Production}}$$

The rate of capital turnover is a measure of the efficiency of the use of capital. A small capital turnover figure indicates the investment in the hog enterprise is not too large in comparison to the value of production from the enterprise.

PHYSICAL PRODUCTION DATA - METHOD OF CALCULATION

FEEDER ENTERPRISE

$$\begin{aligned} \text{Cwt. Live Production} = & \text{No. of Hogs Produced (No. Sold + No. Used in Home)} \\ & \times (\text{Average Live Sale Weight} - \text{Average Purchase Weight}) \\ & + (\text{Inventory Change} \times \frac{(\text{Sale Weight} - \text{Purchase Weight})}{2}) \end{aligned}$$

$$\text{Average Live Weight Gain of Finished Hogs} = \text{Average Market Weight} - \text{Average Weaner Purchase Weight}$$

$$\text{Pounds of Feed Fed Per Cwt. Produced} = \frac{\text{Total Pounds of Feed Fed}}{\text{Cwt. Live Production}}$$

$$\text{Feed Conversion (live weight)} = \frac{\text{Total Pounds of Feed Fed}}{\text{Total Pounds of Live Weight Production}}$$

$$\text{Feed Conversion (dressed weight)} = \frac{\text{Total Pounds Feed Fed}}{\text{Total Pounds of Liveweight Production}} \times 1.25$$

$$\text{Per Cent Death Loss} = \frac{\text{Number of Deaths}}{\text{No. of Pigs Purchased}} \times 100$$

$$\text{Total Investment Per Cwt. Produced} = \frac{\text{Total Investment}}{\text{Cwt. Live Production}}$$

$$\text{Number of Labor Hours Per Cwt. Produced} = \frac{\text{Total Labor Hours}}{\text{Cwt. Live Production}}$$

$$\text{Feed Costs Per 100 lbs. Dressed Weight} = \frac{\text{Total Feed Costs}}{\text{Cwt. Live Production}} \times 1.25$$

$$\text{Total Costs Per 100 lbs. Dressed Weight} = \frac{\text{Total Production Costs}}{\text{Cwt. Live Production}} \times 1.25$$

PHYSICAL PRODUCTION DATA - METHOD OF CALCULATION

FARROW - FINISH

$$\begin{aligned} \text{Cwt. Live Weight Production} = & \# \text{ of Market Hogs Produced} \times \text{Average Market Weight (live)} \\ & + \text{Feeder Pig Inventory Change} \times \frac{1}{2} \text{ Market Hog Weight} \\ & + \text{Sow Inventory Change} \times \text{Market Hog Weight} \\ & + \text{Weaner Inventory Change} \times \frac{1}{2} \text{ Weaner Pig Weight} \end{aligned}$$

$$\text{Number of Farrowings Per Sow Per Year} = \frac{\text{Total Number of Farrowings}}{\text{Average Number of Sows}}$$

$$\text{Per Cent Death Loss Before Weaning} = \frac{\text{Number of Deaths From Birth to Weaning}}{\text{Total Number of Pigs Born}} \times 100$$

$$\text{Number of Pigs Weaned Per Sow/Year} = \frac{\text{Number of Farrowings/Sow/Year} \times \text{Number of Pigs Weaned Per Litter}}{\text{Number of Pigs Weaned Per Litter}}$$

$$\text{Number of Sows Per Boar} = \frac{\text{Average Number of Sows}}{\text{Average Number of Boars}}$$

$$\text{Feed Conversion (live weight)} = \frac{\text{Total Pounds of Feed Fed}}{\text{Total Pounds Live Weight Production}}$$

$$\text{Feed Conversion (dressed weight)} = \frac{\text{Total Pounds of Feed Fed}}{\text{Total Pounds Live Weight Production}} \times 1.25$$

$$\text{Per Cent Death Loss After Weaning} = \frac{\text{Number of Deaths After Weaning}}{\text{Number of Pigs Weaned}}$$

$$\text{Total Investment Per Sow} = \frac{\text{Total Investment}}{\text{Average No. of Sows}}$$

$$\text{Total Investment Per Cwt. Produced} = \frac{\text{Total Investment}}{\text{Cwt. Live Weight Production}}$$

$$\text{Labor Hours Per Cwt. Produced} = \frac{\text{Total Labor Hours}}{\text{Cwt. Live Weight Production}}$$

$$\text{Feed Costs Per 100 lbs. Dressed Weight} = \frac{\text{Total Feed Costs}}{\text{Cwt. Live Weight Production}} \times 1.25$$

$$\text{Total Costs Per 100 lbs. Dressed Weight} = \frac{\text{Total Production Costs}}{\text{Cwt. Live Weight Production}} \times 1.25$$

PHYSICAL PRODUCTION DATA - METHOD OF CALCULATION

FARROW - WEANING

$$\text{Number of Farrowings Per Sow Per Year} = \frac{\text{Total Number of Farrowings}}{\text{Average Number of Sows}}$$

$$\text{Per Cent Death Loss Before Weaning} = \frac{\text{Number of Deaths from Birth to Weaning}}{\text{Total Number of Pigs Born}} \times 100$$

$$\text{Number of Pigs Weaned Per Sow Per Year} = \frac{\text{Number of Farrowing Per Sow/Year}}{\text{X Number of Pigs Weaned Per Litter}}$$

$$\text{Number of Sows Per Boar} = \frac{\text{Average Number of Sows}}{\text{Average Number of Boars}}$$

$$\text{Total Pounds of Feed Fed Per Weaner Pig Produced} = \frac{\text{Total Feed Fed}}{\text{Average No. of Weaner Pigs Prod.}}$$

$$\text{Total Investment Per Sow} = \frac{\text{Total Investment}}{\text{Average No. of Sows}}$$

$$\text{Number of Labor Hours Per Sow} = \frac{\text{Total Labor Hours}}{\text{Average Number of Sows}}$$

$$\text{Feed Costs Per Weaner Pig Produced} = \frac{\text{Total Feed Costs}}{\text{Number of Weaner Pigs Produced}}$$

$$\text{Total Costs Per Weaner Pig Produced} = \frac{\text{Total Production Costs}}{\text{Number of Weaner Pigs Produced}}$$

